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Process module of oil-containing wastewater treatment of local sewage system and its controlling mathematical model

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Abstract

© 2016, International Journal of Pharmacy and Technology. All rights reserved.At contemporary level of development of oil-extracting, oil-processing and oil-chemical industry, with development of car-services' market and growth of number of motor transport establishments, fuel-fiiling stations, car washes and other similar objects, the issue of purification of such enterprises' waste waters becomes more and more critical; this stipulates the necessity of application of technologies, neutralizing this impact. Application of pure bio-technologies with installation of selected micro-organisms providing high indexes of water purification in manageable mode is the most perspective in the field of oil-contaminated industrial waste waters purification. The article "Bio-technical module of hydrocarbon containing waste waters of enterprises of individual sewage system" contains the data on optimization of oil and oil products bio-degradation of OJSC "Kazanorgsyntez" with application of jet-settler (JS), specially created for this purpose, and bringing of all bio-technological scheme into the mode of purification and advanced treatment of technological waste waters up to standards of reverse water supply or discharge into open water bodies without damaging of their ecological condition. A constituent part of biotechnological scheme are mathematic models on lower and upper levels of two-level modeling (the lower level is defined by analytical model of bio-reactor and directed at provision of waste waters purification up to maximum permissible concentration; the upper level is defined by record of network models in Petri's networks, which provides the management of flows in the installation) that are used for management of oilcontaining waste waters purification process, developed by authors. Their program realization allows to analyze the condition of bio-purification system in general, forecast the development of emergency situations and manage the bio-purification process.

Keywords

Association, Bio-degradation, Hydrocarbon-containing waste waters purification, Mathematic model, Micro-organisms, Modified Petri's network, Oil, Oil contaminations, Waste waters